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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,630	09/09/2003	Sang-Il Lee	5000-1-447	3433

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EXAMINER	
GOETZE, SIMON A	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/658,630	LEE ET AL.	
	Examiner	Art Unit	
	Simon A. Goetze	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This Action is in response to Applicant's amendment file on May 4, 2007. Claims 1, 6, 8, and 11 have been amended. Claims 1-12 are still pending in the application. **This Action is made FINAL.**

Claim Rejections - 35 USC § 112

The 35 USC § 112 rejection of **claims 1 and 6** has been withdrawn, as the appropriate corrections have been made by the filing of the instant amendment.

Response to Arguments

Applicant's arguments with respect to **claims 1, 6, and 11** (as well as their respective dependents) have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. **Claims 1-2 and 6-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **McCorkle et al. (US Patent Application Publication 2003/0054764)** in view of **Koch et al. (US Patent Application Publication 2004/0033075)** further in view of **Suzuki et al. (US Patent Application Publication 2002/004801)**.

Consider **claims 1 and 6**, McCorkle et al. discloses an indoor local area network (LAN) system and method comprising:

at least a first remote terminal comprising:

an ultra wide-band (UWB) conversion module for converting input digital data into analog data in an ultra wide-bandwidth for transmission from said at least first remote terminal *(input data bits are encoded and applied to the UWB waveform generator before transmission – Figure 1a – Page 5, Paragraphs 0049-0050)*, and

an antenna connected with said UWB module for wirelessly transmitting the converted analog signal from the UWB module of the remote terminal in the ultra wide-bandwidth *(antenna 15 – Figure 1a – Page 5, Paragraphs 0049-0050)*;

wherein said UWB module is adapted for receiving an analog signal in an ultra wide-bandwidth via the antenna and converting the received analog signal into a digital signal *(receiver 11 converts received UWB waveform into an electrical signal and then is correlated, leaving the data – Figure 1a – Page 2, Paragraphs 0022-0023 and Page 4, Paragraph 0046)*;

at least a first access point for performing UWB-based wireless communication with said first remote terminal in a corresponding area *(UWB transceiver used as part of a local area network – Page 7, Paragraph 0070)*; and

a central unit in communication with said first access point determining a destination of the converted digital signal and transmitting the digital signal to the determined destination *(part of the LAN infrastructure – Page 7, Paragraph 0070)*.

However, McCorkle et al. fails to disclose that the access point converts the received signal into and optical signal before transmitting the information to the central unit.

In related prior art, Koch et al. discloses that said access point receives said analog signal transmitted from said first remote terminal and converts the received analog signal into an optical signal *(access points receive from a variety of devices and convert received data to optical signals in order to transmit to the PON interface – Page 3, Paragraphs 0025 and 0027)*; and

said central unit receiving via an optical cable, said optical signal converted by said access point, converting the received optical signal into a digital signal *(upstream data transmission from PON interface 12 e.g. data sent to an ISP – ISP 18 via Router 20, Figure 1 – Page 3, Paragraphs 0025-0026)*.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the teachings of Koch et al. with those of McCorkle et al. in order to utilize the high bandwidth data transmissions of UWB in a LAN setting due to the short distance capabilities of UWB.

However, while McCorkle et al. as modified by Koch et al. disclose an indoor local area network which communicates using UWB-based devices and translates the analog UWB signals of the transmission to optical for transmission over an optical cable, they fail to specifically disclose that the access point does not include a UWB module.

In related prior art, Suzuki et al. discloses a communication system which receives analog RF signals (UWB is an analog RF signal) from a mobile terminal and then converts them to optical to be transmitted over an optical cable *(Figure 3 – Abstract; Page 2, Paragraph 0039; Pages 2-3, Paragraph 0042; Page 3, Paragraphs 0043-0045)*.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the teachings of Suzuki et al. with those of McCorkle et al. as

modified by Koch et al. in order to provide flexibility by receiving analog signals regardless of their type and convert them to optical signals.

Consider **claims 2 and 7**, as applied to claims 1 and 6 above, McCorkle et al. as modified by Koch et al. and further by Suzuki et al. fails to specifically disclose the use of UWB remote terminals with the optically connected LAN.

McCorkle et al. discloses a UWB terminal in communication with an access point which further forwards the information to a central unit (*UWB transceiver used as part of a local area network – Page 7, Paragraph 0070*) and an access point which receives data and transmits it to the UWB terminal *(receiver receives information via the antenna – Figure 1 – Page 3, Paragraph 0025)*.

Koch et al. discloses the use of remote terminals which wirelessly connect to an access point optical transmitter for receiving said signal transmitted from said first remote terminal and for converting the received signal into an optical signal and transmitting the converted optical signal to said central unit via said optical cable *(node 28 transmits received information from remote terminals via optical fiber 11 – Figure 1 – Page 2, Paragraph 0024 and Page 3, Paragraphs 0024-0026)*; and

an access point optical receiver for receiving an optical signal transmitted from said central unit, converting the received optical signal and transmitting the converted signal to a remote terminal of said determined destination *(node 28 receives information via optical fiber 11 and transmits the information to the remote terminals – Page 3, Paragraph 0029)*.

It would have been obvious of a person having ordinary skill in the art at the time the invention was made to incorporate the teachings of Koch et al. with those of McCorkle et al.

because Koch et al. discloses an optically connected LAN which converts signals to be transmitted to a variety of terminals, such as the UWB terminal taught by McCorkle et al. and to employ this system as UWB in order to provide high bandwidth communications wirelessly to remote users.

2. **Claims 11-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Koch et al. (US Patent Application Publication 2004/0033075)** in view of **McCorkle et al. (US Patent Application Publication 2003/0054764)** further in view of **Suzuki et al. (US Patent Application Publication 2002/004801)**.

Consider **claim 11**, Koch et al. discloses an indoor LAN system comprising:

a first area, a second area, and a third area of sub-networks having respective management ranges of nodes therein *(there can be any number of groups 26 containing nodes 28 which are connected to terminals – Figure 1 – Page 3, Paragraphs 0025-0026)*;

a first access point, a second access point, and a third access point, each of the first, second and third access points associated with a respective area *(there can be any number of groups 26 containing nodes 28 which are connected to terminals – Figure 1 – Page 3, Paragraphs 0025-0026)*;

a central unit that is in communication with the first, second, and third areas and with an external network *(PON interface is in communication with PSTN, ISP, and Video Content as an example, but could be connected to many other different sources – Figure 1 – Page 3, Paragraphs 0024 and 0027)*;

wherein each of the sub-networks and respective nodes communicate via their respective communication protocols *(Page 3, Paragraph 0025)*; and

wherein each of the sub-networks and the central unit and the central unit communicate via optical fiber *(optical fiber cable 11 – Figure 1 – Page 3, Paragraphs 0024 and 0029)*; and

wherein each of the access points includes an optical transmitter/receiver module for converting optical communication from one of the first, second, and third areas or said central unit and converting said communication into a signal to communicate with at least one of the respective nodes *(PON communicates with the nodes 28 – Figure 1 – Page 3, Paragraphs 0024 and 0029)*.

However, Koch et al. fails to disclose that the remote terminals communicate with the access points of the LAN via UWB signals.

In related prior art, McCorkle et al. discloses a UWB-based wireless communication remote terminal with said first remote terminal in a corresponding area which communicates with a LAN *(UWB transceiver used as part of a local area network – Page 7, Paragraph 0070)*.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the teachings of Koch et al. with those of McCorkle et al. in order to utilize the high bandwidth data transmissions of UWB in a LAN setting due to the short distance capabilities of UWB.

However, while McCorkle et al. as modified by Koch et al. disclose an indoor local area network which communicates using UWB-based devices and translates the analog UWB signals of the transmission to optical for transmission over an optical cable, they fail to specifically disclose that the access point does not include a UWB module.

In related prior art, Suzuki et al. discloses a communication system which receives analog RF signals (UWB is an analog RF signal) from a mobile terminal and then converts them to optical to be transmitted over an optical cable *(Figure 3 – Abstract; Page 2, Paragraph 0039; Pages 2-3, Paragraph 0042; Page 3, Paragraphs 0043-0045)*.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the teachings of Suzuki et al. with those of McCorkle et al. as modified by Koch et al. in order to provide flexibility by receiving analog signals regardless of their type and convert them to optical signals.

Consider **claim 12**, as applied to claim 11 above, Koch et al. as modified by McCorkle et al. and further by Suzuki et al. discloses that the central unit and the external network communicate via a Fiber To The Home (FTTH) system *(Koch et al – PON networks are known in the art as FTTH systems)*.

3. **Claims 3-5 and 8-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over **McCorkle et al. (US Patent Application Publication 2003/0054764)** in view of **Koch et al. (US Patent Application Publication 2004/0033075)**, further in view of **Suzuki et al. (US Patent Application Publication 2002/004801)** and **Santhoff et al. (US Patent Application Publication 2006/0291536)**.

Consider **claims 3-4 and 8-9**, as applied to claims 2 and 7 above, McCorkle et al. as modified by Koch et al. and further by Suzuki et al. discloses that said central unit includes:

a central unit optical transmitter/receiver module for receiving said optical signal from said first access point optical transmitter and converting the received optical signal into an

electrical signal *(Koch et al. – PON interface is in communication with PSTN, ISP, and Video Content as an example, but could be connected to many other different sources – Figure 1 – Page 3, Paragraphs 0024 and 0027)*;

a central unit module for receiving said electrical signal converted by said optical transmitter/receiver module and converting the received electrical signal into a digital signal and for converting into an optical signal and transmitting to the access point for management of a network to which a destination remote terminal corresponding to said transfer path information belongs *(Koch et al. – upstream data transmission from PON interface 12 e.g. data sent to an ISP – ISP 18 via Router 20, Figure 1 – Page 3, Paragraphs 0025-0026 – PON communicates with the nodes 28 – Figure 1 – Page 3, Paragraphs 0024 and 0029)*; and

a routing module for determining a destination of said digital signal converted by said module from said digital signal, setting up a transfer path of said digital signal based on the determined result and sending said digital signal to said module with information regarding said transfer path contained therein *(Page 3, Paragraph 0027; Page 4, Paragraphs 0035-0036)*.

However, McCorkle et al. as modified by Koch et al. and further by Suzuki et al. fails to specifically disclose that the central unit contains a UWB module.

In related prior art, Santhoff et al. discloses UWB communication through a wire medium, such as an optical fiber, and portions of the network are connected via optical fiber and access points which function as wireless UWB devices, as well. The central unit contains a module which is adapted to convert said digital signal containing said information regarding said transfer path set up by said routing module into an analog electrical signal of the ultra wide-bandwidth and send the converted analog electrical signal to said central unit optical

transmitter/receiver *(Figures 3 and 4 – Abstract; Page 6, Paragraphs 0065-0066; Page 7, Paragraphs 0071-0073; Page 8, Paragraph 0082).*

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the teachings of Santhoff et al. with those of McCorkle et al. as modified by Koch and further by Suzuki et al. in order to utilize the high bandwidth capability of UWB signals.

Consider **claims 5 and 10**, as applied to claims 3 and 8 above, McCorkle et al. as modified by Koch et al. and further by Suzuki et al. and Santhoff et al. discloses:

that said routing module is adapted to, upon determining from said digital signal converted by said central unit UWB module that said destination of said digital signal is not a terminal in a network managed by said access point connected with said central unit via said optical cable, transfer said digital signal containing said transfer path information to an outdoor network connected with said central unit, and manage communication of a destination remote terminal corresponding to said transfer path information *(Koch et al – there can be any number of groups 26 containing nodes 28 which are connected to terminals – Figure 1 – Page 3, Paragraphs 0025-0026 and the destination and path is determined with addressing Page 3, Paragraph 0027; Page 4, Paragraphs 0035-0036).*

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

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Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

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Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Simon A. Goetze whose telephone number is (571) 270-1113. The Examiner can normally be reached on Monday-Thursday from 7:30am to 5:00pm and Friday from 7:30am to 4:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Nick Corsaro can be reached on (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Simon A. Goetze
S.A.G./sag

July 19, 2007

RAFAEL PEREZ-GUTIERREZ
SUPERVISORY PATENT EXAMINER
7/23/07